

10th Annual Force Health Protection Conference



**Medical Information Management on the Battlefield:
From EHRs to Command and Control**

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August 10, 2007

Agenda



- » **System Overview**
- » **Challenges and Solutions**
- » **System Interoperability**
- » **Applications**
- » **System Status**
- » **Potential Civilian Applicability**

Historical Challenges

- » **No electronic record input from theater**
- » **Limited visibility of medical logistics and blood status**
- » **No visibility of patients within theater healthcare system**
- » **Minimal or no telecommunications infrastructure**
- » **No integration between theater and sustaining base applications**
- » **No capability to electronically aggregate data for medical situational awareness and surveillance**



Legislation

“...every Soldier, Sailor, Airman and Marine will have a comprehensive, life-long medical record...”

Source: Special report of the Presidential Advisory Committee on Gulf War Veterans' Illness, 1997

“The Secretary of Defense shall establish a system to assess the medical condition of members of the armed forces...who are deployed.”

Title 10; Section 1074f (1997): Medical tracking system for members deployed overseas

“When available, TMIP tools will be used to capture inpatient and outpatient encounters.”

ASD(HA) memo; 2005; Expanded use of automated medical data collection and patient tracking applications

Mission



- » **Theater input to the longitudinal electronic health record**
- » **Medical component of Global Combat Support System (GCSS) and Global Command and Control System (GCCS)**
- » **Provide theater patient visibility**
- » **Provide medical situational awareness in theater of operations**
 - **Provide medical surveillance**
- » **Provide theater logistical and blood management capabilities**
- » **Facilitate movement of pertinent theater medical data to DoD and Service-specific systems or databases**

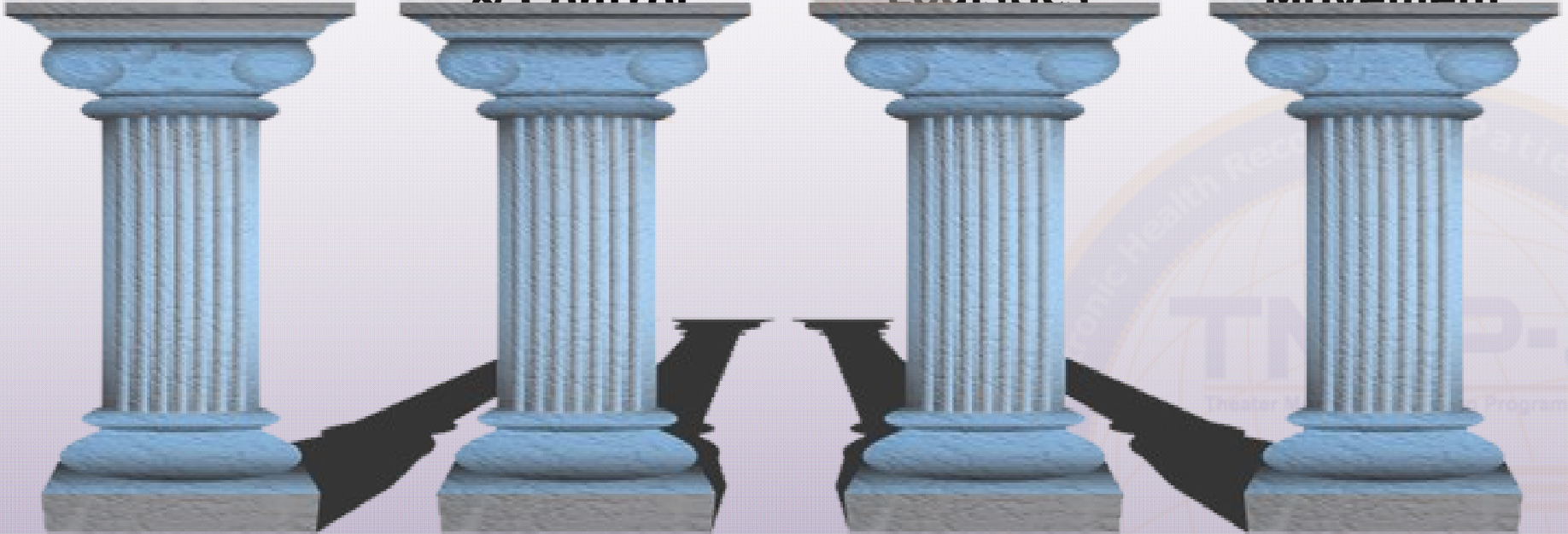
Mission Pillars

**Electronic
Health Record**

**Command
& Control**

**Medical
Logistics**

**Patient
Movement**



Technical Solutions

- » **Electronic patient care documentation**
- » **Medical logistics and blood management**
- » **Similar functionality between theater and sustaining base**
- » **Patient visibility within the theater healthcare system**
- » **Operates in austere communication environments**
- » **Medical planning, surveillance, and Command & Control**
- » **Scalable, flexible and portable**

Continuum of Care



DoD's Electronic Health Record



Seamless Care for America's Heroes

GARRISON

THEATER



Theater Complement to MHS

Sustaining Base

- » The Military's longitudinal electronic health record
- » Robust communications infrastructure
- » Medical logistics
- » Environmental health
- » Other sustaining base systems
- » Large footprint

Theater

- » Operates in austere communications environments
- » One system of record
- » Portable, modular
- » Medical surveillance
- » Logistics and patient movement visibility
- » Provides theater data to the Military's electronic health record



Integration



Developmental Partners

Clinical
Information
Technology
Program
Office (CITPO)

Telemedicine & Advanced
Technology Research
Center (TATRC)

Theater Medical
Information Program
- Joint (TMIP-J)

Resource Information
Technology Program
Office (RITPO)

Defense Medical
Logistics Standard
Support (DMLSS)

United States
Transportation
Command
(USTRANSCOM)

Other
Partners



Applications

AHITA
Theater
CHCS NT
AHITA
Warrior

AHITA
Mobile
TeleHealth
TRAVAX
EIC

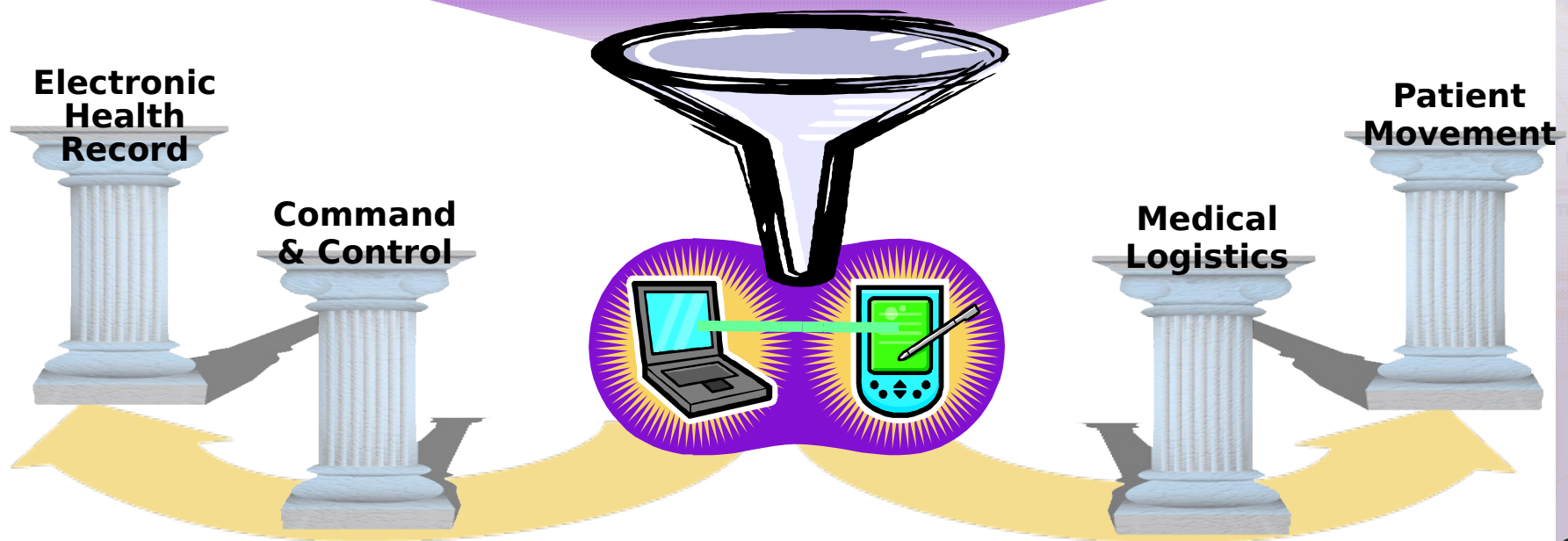
TMDS
JMeWS
MAT/JMAT
JTTR
JPTA
BHIE-T

TMIP CHCS
Cache
DOEHR - IH

DCAM
PMITS
DMLSS
T-DBSS

TRAC2ES Mobile

SAMS
GEMS
MEDIC
GCSS



Theater Medical Information Program

Military Infrastructure Programs



**Deploying the Theater Medical Information Program - Joint
Software Suite**

Current Capability

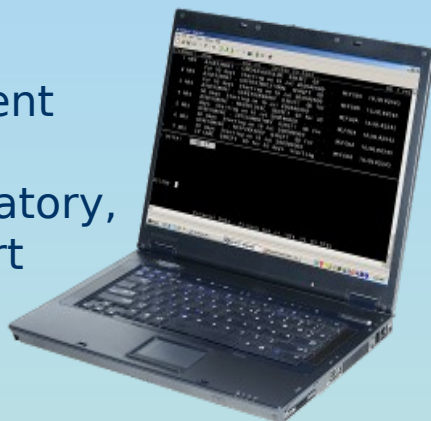
AHLTA-Mobile Version 1.9.8

- First Responder Application
- Electronic Field Medical Card



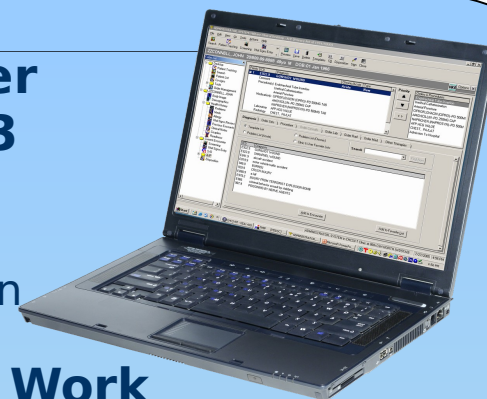
Composite Health Care System New Technology (CHCS-NT) Version 1.3

- Inpatient Treatment
- Documentation
- Pharmacy, Laboratory,
- Radiology Support



AHLTA-Theater Version 301.3

- Outpatient
Treatment
Documentation

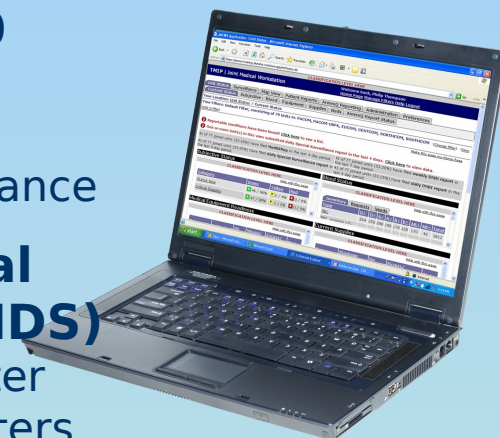


Joint Medical Work Station (JMeWS) Version 2.2.3.0

- Command and
Control
- Medical Surveillance
- Classified/SIPR

Theater Medical Data Store (TMDS)

- Individual Theater
Medical Encounters
- Unclassified/NIPR



Other Applications

Defense Medical Logistics Standard Support (DMLSS) Customer Assistance Module (DCAM)

- » Tool for replenishing medical supplies

Patient Movement Items Tracking System (PMITS)

- » Tracks medical equipment that travels with evacuated patients

Medical Logistics



Joint Patient Tracking Application (JPTA)

- » Tracks deployed patients' location

Patient Movement



U.S. Transportation Command Regulating and Command & Control Evacuation System (TRAC2ES)

- » Monitors and tracks patients leaving theater via Air Force aero-evacuation (interface)

Block 1 Service Packs

Service Pack 2

Released April 2006

- Report Module Enhancements
- CHCS-NT Message Resend Utility
- Message Re-Transmission Utility
- AHLTA Theater Database Performance Enhancements
- AHLTA Mobile Enhanced References and Help Screens

Service Pack 4

Released December 2006

- Defense Medical Information System (DMIS) Identifier (ID) - Maintenance Upgrade to CHCS-NT

Service Pack 5

Released April 2007

- AHLTA Theater Enhancement
 - Transmit Amended & Appended Encounters
- Message Regeneration
- Data Extraction Utility
- MEDCIN Update
- JTTR Approved Data Elements

Service Pack 3

Released November 2006

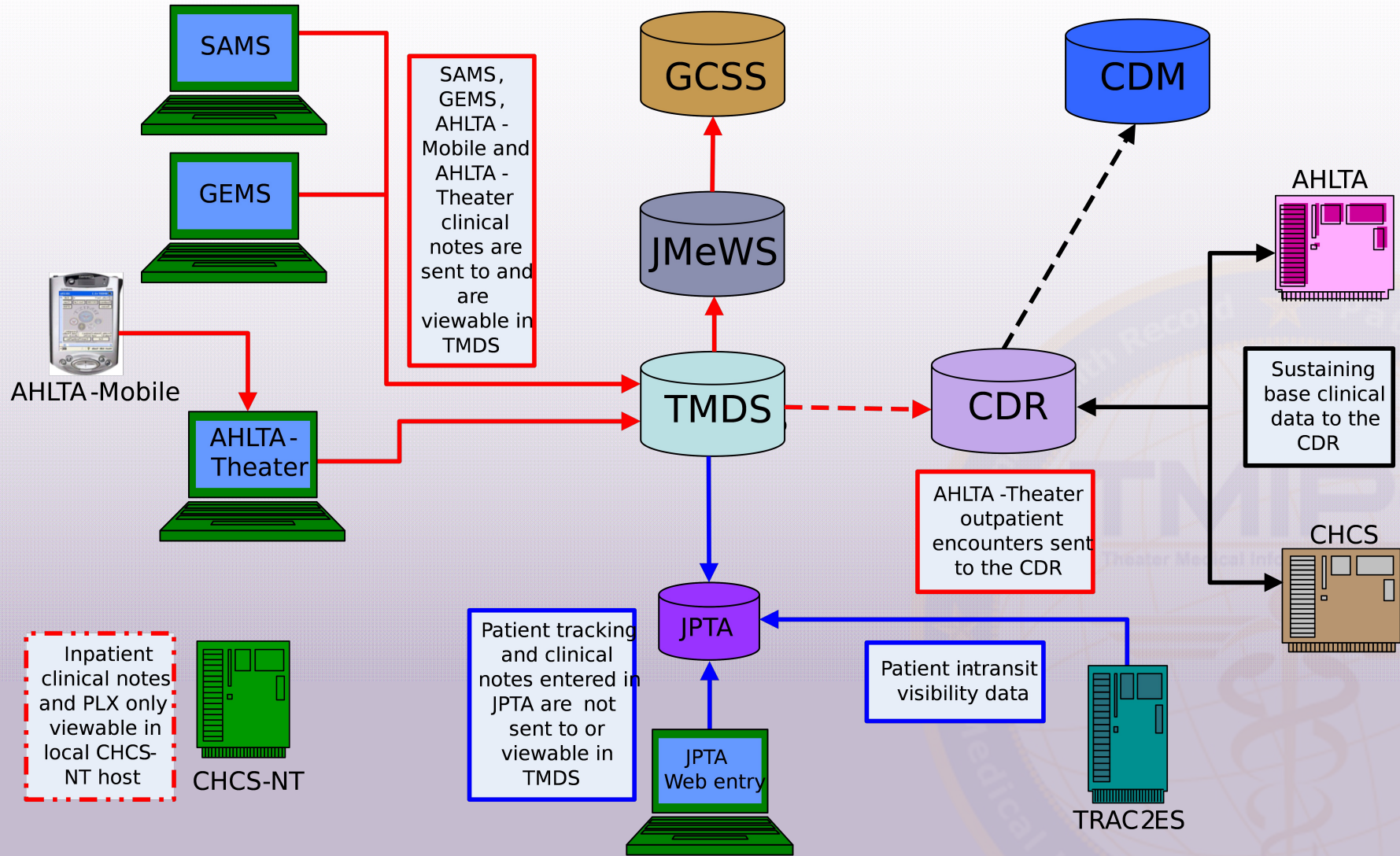
- Defense Medical Logistics Support System (DMLSS) Customer Assistance Module (DCAM)
- TRANSCOM Regulating And Command & Control Evacuation System (TRAC2ES) Web Link

Service Pack 6

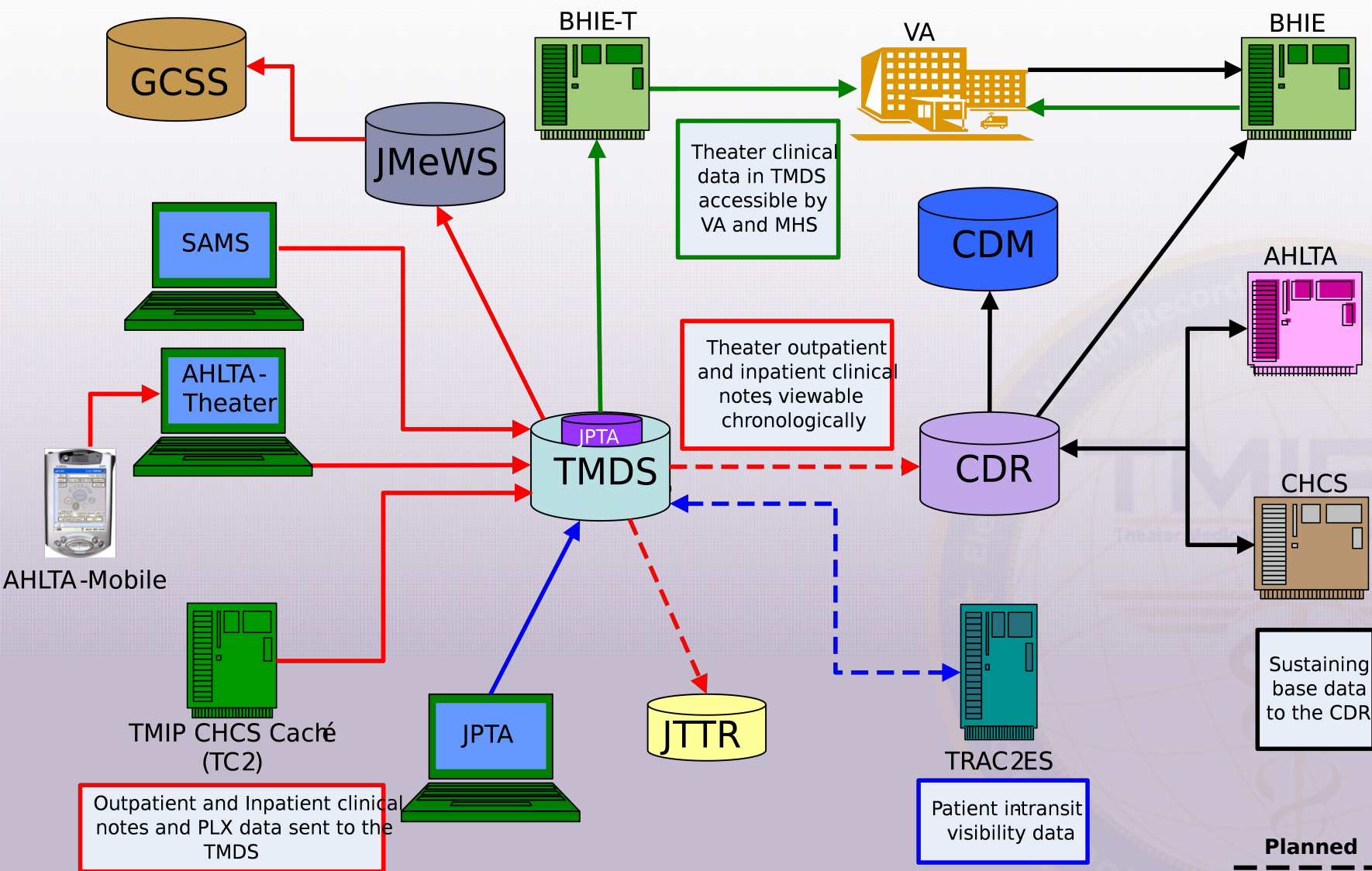
Released April 2007

- TMIP CHCS Caché (TC2) [CHCS-NT Replacement]

Theater Medical Data Integration (TMDI): Today

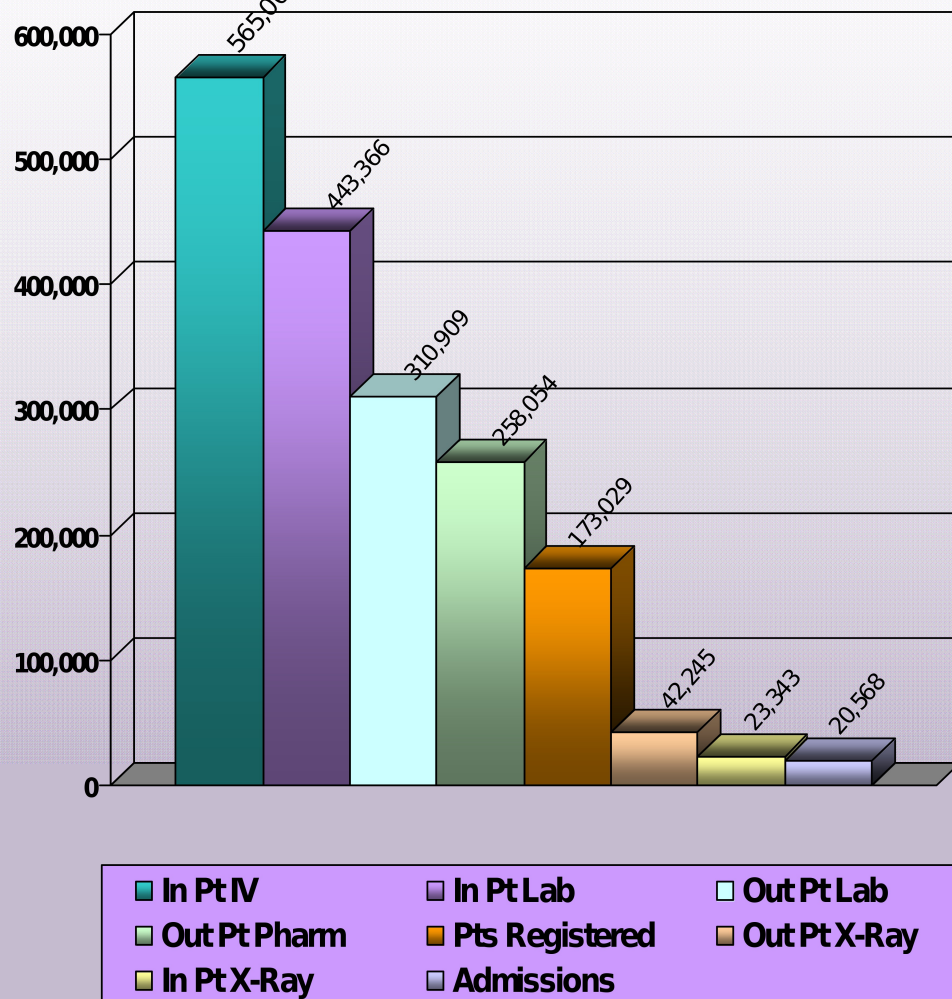


TMDI: Near-term (Early 2nd QTR FY08)

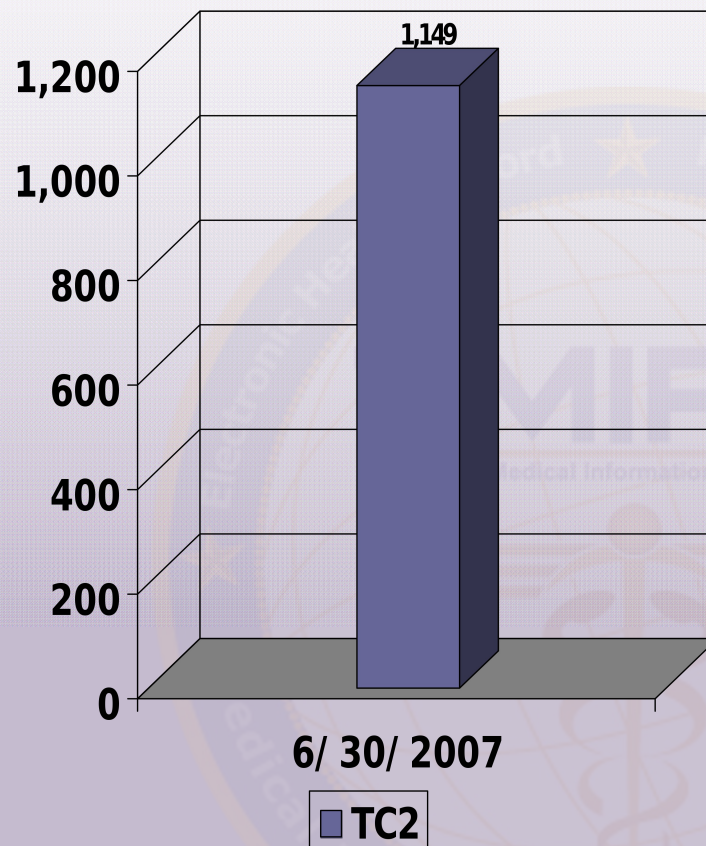


TMIP Inpatient Data

Inpatient Workload
(01 Apr 05 - 30 April 07)
1,836,580 Total Workload

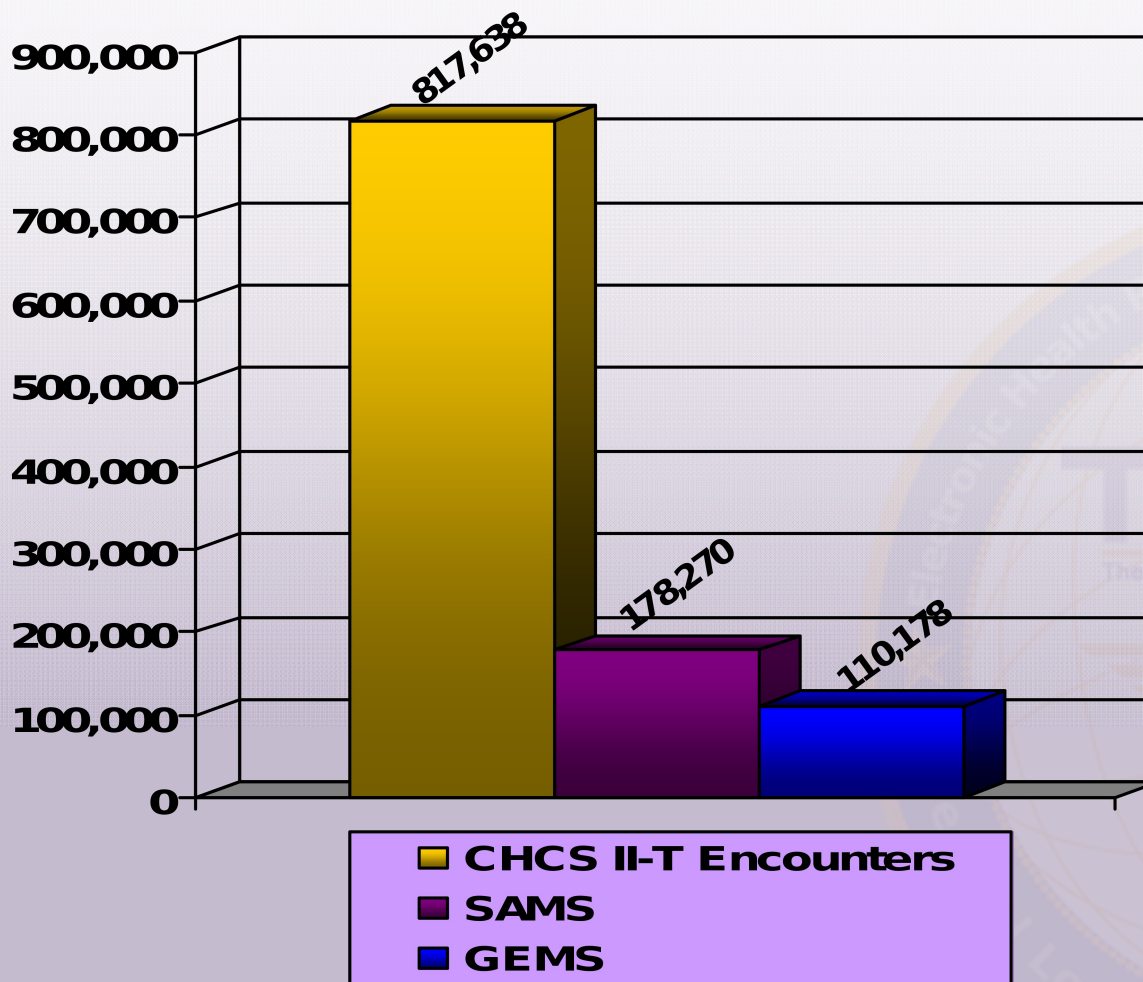


Inpatient Level III Statistics
TC2
(15 May 07 to 30 June 07)
1,149 Encounters



TMIP Outpatient Data

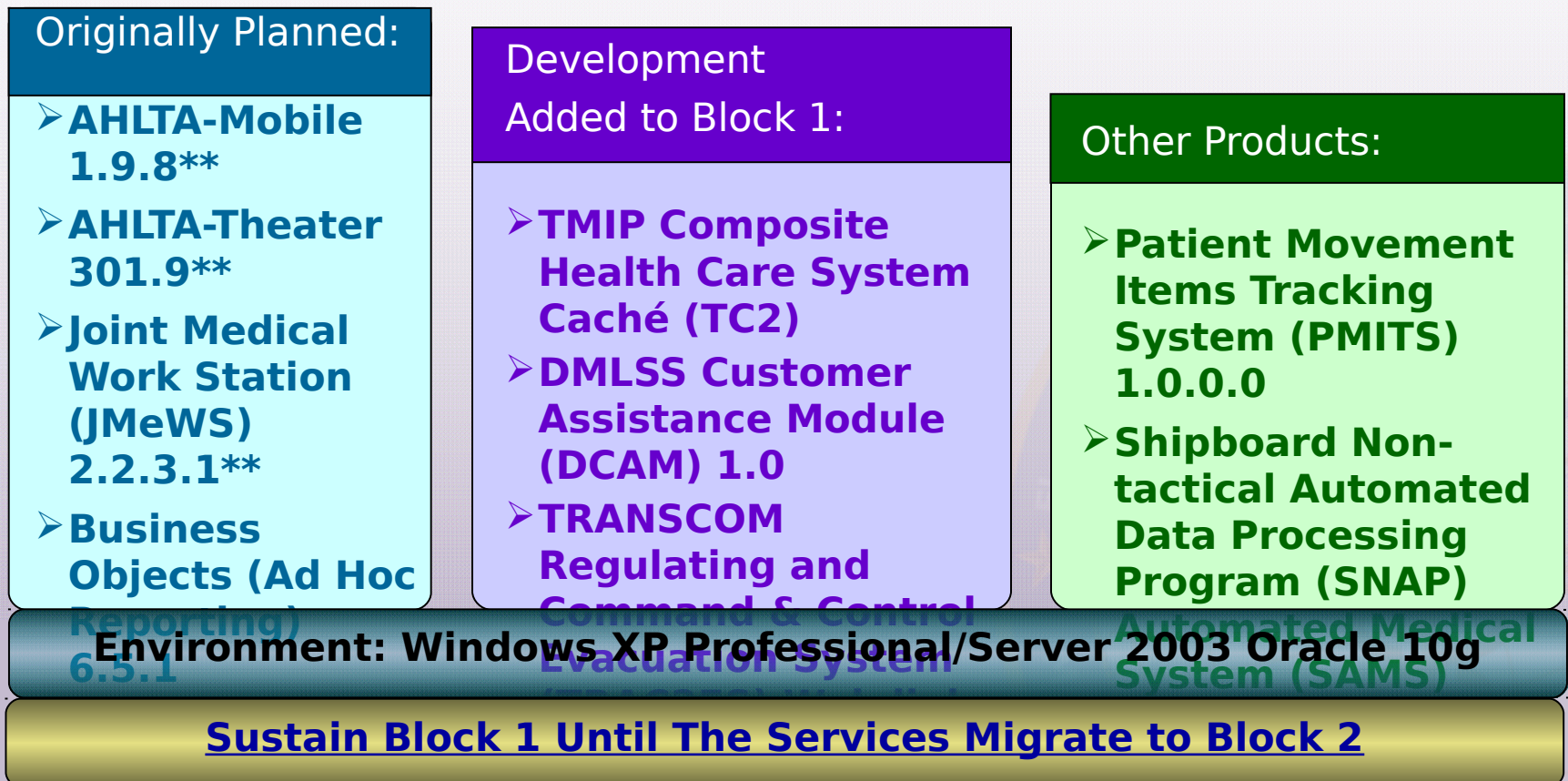
Outpatient Statistics
Jan 05 - 30 Jun 07
1,106,086 Total Encounters



Block 2 Release 1*

*OT planned 2nd Q FY08

Delivered to Service Infrastructure Programs October 2006



Block 2 Release 1		
Application	New Capability	Business Practice
AHLTA Theater	Demographic Verification, Drug-Allergy and Drug-to-Drug Interaction, Level II Limited Inpatient Documentation, *JTTR, MEDCIN/ICD-9 Update, Amend/Append Message Regeneration, Data Extraction	Outpatient Documentation
AHLTA Warrior	*Read Only Access to the Clinical Data Repository (CDR) Through AHLTA; Secure Web Based Remote Access	Review Medical History
Joint Medical Work Station (JMeWS)	*Syndromic Surveillance, Inpatient Display, Patient Evacuation Annex Q (AF MEDRED), Break the Glass, Disease Non-Battle Injury Enhancements	Command and Control, Force Health Protection, Patient Care Visibility, Electronic Medical Record Visibility
TMIP CHCS Caché (TC2)	*147 Health Level 7 (HL7) messages to Theater Medical Data Store (TMDS), Same Legacy Baseline as Sustaining, Additional Inpatient Progress Notes; i.e., Post-op, Nursing, etc.	Inpatient Documentation
AHLTA Mobile	*Enhanced Medical References, Disease Non-Battle Injury (DNBI) Mapped to AHLTA Theater, Update MEDCIN/ICD-9 Codes	First Responders
Shipboard Non-tactical Automated Data Processing Program (SNAP) Automated Medical System (SAMS)	New to TMIP; Supports NAVY Unique Afloat Mission	NAVY
Defense Medical Logistics Standard Support (DMLSS) Customer Assistance Module (DCAM)	*“Store and Forward” Tool for Replenishing Medical Supplies	Medical Logistics
Patient Movement Items Tracking System (PMITS)	Tracks Medical Equipment Traveling with Patients	Medical Logistics
Business Objects	Standards and Ad Hoc Reports	Reporting
*Block 2 Release 1 Functionality Ported Back to Enhance Block 1 (Service Packs)		



Enhancements to AHLTA-Theater

- » **Same look and feel as AHLTA in garrison**
- » **Dental**
- » **Post-Deployment Health Reassessment (PDHRA)**
- » **Individual medical readiness: immunizations, profiles**
- » **AIM forms**
- » **Battle/non-battle categorization (BI/DNBI)**
- » **Off-line demographic verification**
- » **Able to transfer encounters¹ via removable media**
- » **Global Expeditionary Medical System (GEMS) and SAMS Patient Encounter Module (PEM) functionality**
 - **Duties Not Including Flying (DNIF)**
 - **Undersea Medicine**
 - **Personnel Reliability Program (PRP)**



Block 2 Release FY08*

* In Development

Products brought forward from Block 2 Release 1

- **AHLTA-Mobile**
- **TMIP Composite Health Care System Caché (TC2)**
- **Patient Movement Items Tracking System (PMITS)**
- **Expeditionary Framework (EF)**
- **Defense Occupational & Environmental Health Readiness System - Industrial Health (DOEHRS-IH) Web**
- **AHLTA Reachback**
- **Medical Analysis Tool**

New Development

- **AHLTA-Theater Convergence**
- **Defense Medical Logistics Standard Support (DMLSS)**
- **DMLSS, Customer Assistance Module (DCAM) Upgrade**
- **Transportation Command Regulating and Command & Control Evacuation System (TRAC2ES), Mobile - Non-Integrated with Expeditionary Framework**
- **Shipboard Non-tactical Automated Data Processing Program (SNAP) Automated Medical System (SAMS) - Interface Demographics**
- **Integrate Joint Patient Tracking Application (JPTA) into Theater Medical Data Store (TMDS)**
- **Public Key Infrastructure (PKI) and Internet Protocol version 6 (IPv6) - Address**

Environment: Windows XP Professional/Server 2003 Oracle 10g

Sustain Block 1 and Block 2 Release 1 Including COTS Licenses and Upgrades

Potential Civilian Uses

- » **Natural Disaster Support**
- » **Humanitarian Assistance**
- » **Pandemic Outbreaks**
- » **Rural Health Care**
- » **Visiting Nurse Service**
- » **Public Schools**

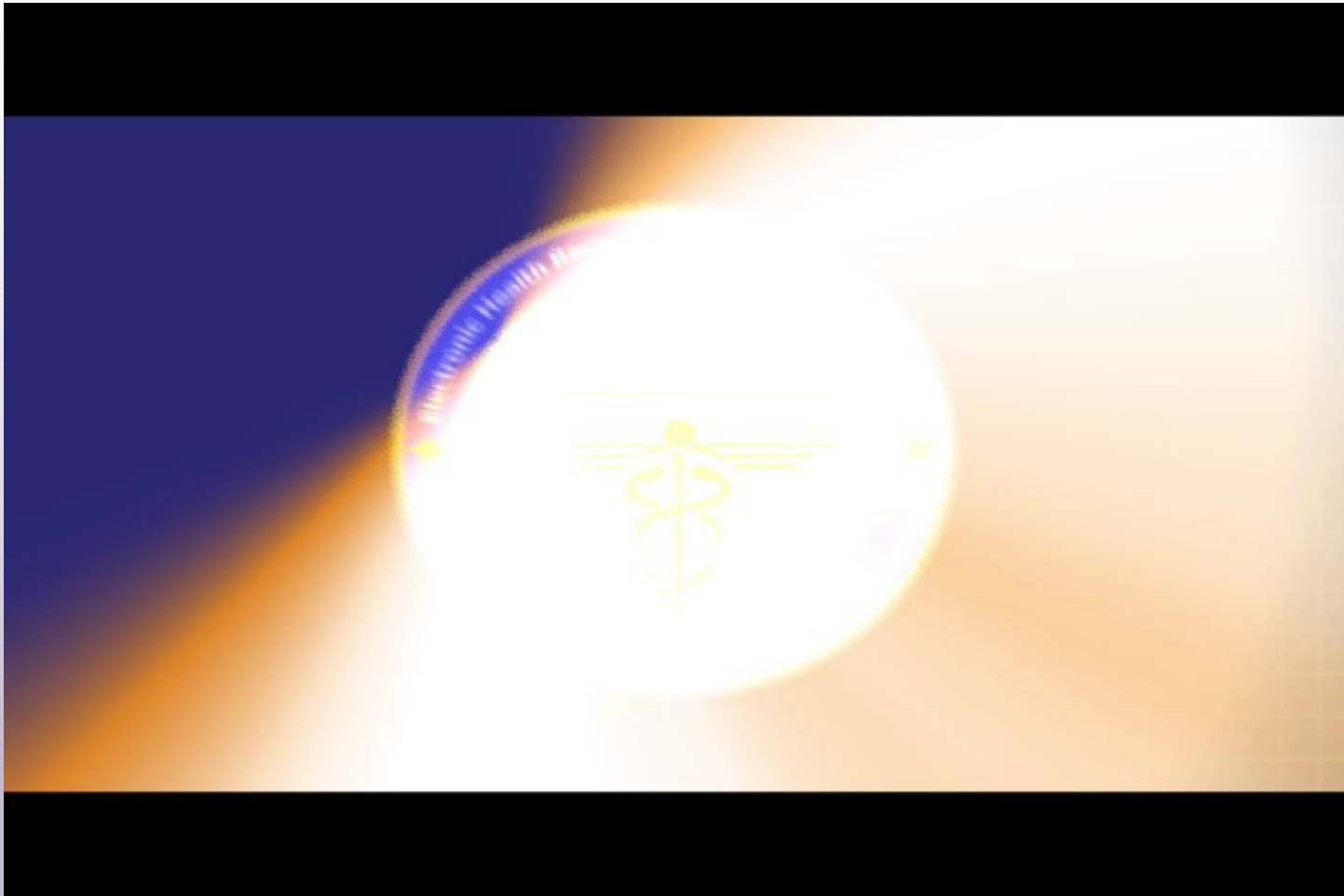


Wrap Up

- » **Theater complement to the Military's electronic health record**
- » **Addresses medical information management challenges in theater**
- » **Operates in austere environments**
- » **Scalable, portable, global, tactical**

Information Management Tools for the Military's Deployed Medical Community

TMIP-J Video



Questions



www.tma.osd.mil/peo/tmip